

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A communication apparatus for transmitting packetized information, said information comprising a plurality of packets, each of said packets comprising data and a header, over a satellite link in a telecommunications system, said system comprising a client, selected from a plurality of potential clients, a server, selected from a plurality of potential servers, a first gateway connected to said client by a first telecommunications link, a second gateway connected to said server by a second telecommunications link, a third telecommunications link connecting said first gateway to said second gateway, said apparatus comprising:

a network interface for linking said first gateway with said client;

a satellite gateway interface;

a system memory; and

a bus interconnecting said network interface, said satellite gateway interface, and said system memory with a processor, said processor operatively disposed to:

intercept a connection with said server, said communication initiated by said client;

establish a connection between said first gateway and said second gateway over said third telecommunications link;

convert a flow of information received from the client from a first transport layer protocol to a second transport layer protocol prior to transmission over the third telecommunications link; and

convert a return flow of information from the second transport layer protocol to the first transport layer protocol prior to transmission to the client;

wherein converting the flow of information and converting the return flow of information occurs transparently to said client and said server;

wherein the connection established between the first and second gateways is terminated when the flow of information and the return flow of information is complete.

2. ~~(Canceled)~~
3. (Previously presented) The apparatus of claim 1 wherein the first transport layer protocol comprises TCP and said second transport layer protocol comprises XTP.
4. (Previously presented) The apparatus of claim 1 wherein said second protocol is more suitable for transmission over a satellite link than using a TCP protocol.
5. (Previously presented) The apparatus of claim 1 wherein said converting comprises removing said header to leave said data substantially intact.
6. (Previously presented) The apparatus of claim 1 wherein said converting comprises removing said header to leave said data substantially intact and encapsulating said data using a satellite protocol header.
7. (Original) The apparatus of claim 6 wherein said data is a portion of said flow of information.
8. (Previously presented) The apparatus of claim 1 wherein said processor is further operatively disposed to receive said flow of information by a gateway over said first telecommunications link.
9. (Previously presented) A communication apparatus comprising:
 - a TCP interface;
 - a satellite gateway interface;
 - a system memory;
 - a bus interconnecting said TCP interface, said satellite gateway interface and said system memory with a processor, said processor operatively disposed to:

intercept a first communication connection between a client and a server;
form a second communication connection between a first satellite gateway
and a second satellite gateway that is over a satellite link;
transmit information describing said first connection to said second
satellite gateway; and
form a third communication connection between said second satellite
gateway and a destination server using said information describing said first connection wherein
said forming said second connection and forming said third connection occur transparently to
said client and said server;
wherein the first, second and third communication connections define a 1:1:1
connection relationship.

10. (Original) The apparatus of claim 9 wherein said information comprises a client
address and a destination server address.

11. (Original) The apparatus of claim 9 wherein said processor is further operatively
disposed to transmit a response from said second satellite gateway to said first satellite gateway
when said third communication connection with said destination server occurs.

12. (Original) The apparatus of claim 9 wherein said processor is further operatively
disposed to transmit a response from said first satellite gateway to said client when said third
communication connection with said destination server occurs.

13. (Original) The apparatus of claim 9 wherein said processor is further operatively
disposed to transmit a failure response from said first satellite gateway to said client when said
third communication connection is lost.

~~14-21.~~ (Canceled)

22. (Previously presented) A communication apparatus as in claim 9 wherein the end-to-end semantics are substantially maintained between the client and the server.

23. (~~Currently amended~~) A communication apparatus comprising:
a system memory;
a processor;
at least one network interface; and
a bus interconnecting the system memory, the processor and the at least one network interface;
wherein the processor is operatively disposed to:
intercept a connection attempt initiated by a client in a first transport layer protocol, the connection attempt intended for a destination server;
establish a transport connection between a first gateway and a second gateway that is over a telecommunications link; ~~and~~
form a communication connection between the second ~~satellite~~ gateway and the destination server;
wherein a bi-directional flow of information between the first and second gateways is in a second transport layer protocol; and
terminate the transport layer connection between the first and second gateways when the bi-directional flow of information is complete.

24. (Previously presented) The apparatus as in claim 23 wherein the communications between the client and the first gateway, between the first and second gateways, and between the second gateway and the server travel on a 1:1:1 connection relationship.

25. (~~Currently amended~~) A communication apparatus comprising:
a system memory;
a processor;
at least one network interface; and

a bus interconnecting the system memory, the processor and the at least one network interface;

wherein the processor is operatively disposed to:

intercept a connection attempt initiated by a client in a first transport layer protocol, the connection attempt intended for a destination server;

establish a transport connection between a first gateway and a second gateway that is over a telecommunications link; and

form a communication connection between the second gateway and the destination server;

wherein a bi-directional flow of information between the first and second gateways is in a second transport layer protocol;

The apparatus as in claim 23 wherein the processor is further operatively disposed to extract an urgent pointer from a packet header in the first transport protocol, and incorporate the urgent pointer into a packet header in the second transport protocol for transmission over the telecommunications link between the first and second gateways.

26. (Previously presented) The apparatus as in claim 23 further comprising a rate control module.

27. ~~(New)~~ A communication apparatus comprising:
a processor interconnected with a system memory and at least one network interface;

wherein the processor is operatively disposed to:

intercept a connection request sent by a client to a server, the connection request in a first transport layer protocol;

establish a connection to a second apparatus over a long latency link;

receive a packetized flow of information over the connection from the second apparatus, the flow of information in a second transport layer protocol;
buffer at least a portion of the flow of information in the system memory; and
send a repacketed flow of information to the client, the repacketed flow of information including the buffered portion of the flow of information.

28. (New) The communication apparatus as in claim 27 wherein the long latency link is a satellite link.

29. (New) The communication apparatus as in claim 27 wherein the repacketed flow of information sent to the client is in the first transport layer protocol.

30. (New) A communication apparatus comprising:
at least one network interface;
a processor;
a system memory; and
a bus interconnecting the at least one network interface, the system memory and the processor;
wherein the processor is operatively disposed to:
intercept a first communication connection between a client and a server;
form a second communication connection between the apparatus and a second apparatus that is over a long latency link;
transmit information describing the first communication connection to the second apparatus, the second apparatus adapted for forming a third communication connection between the second apparatus and the server using the information describing the first communication connection; and
transmit a first connection acknowledgement to the client after the third communication connection with the server is formed.

Appl. No. 09/493,338
Amdt. dated: March 22, 2004
Amendment under 37 CFR 1.116 Expedited
Procedure, Examining Group 2665
Reply to Office Action of November 26, 2003

PATENT

31. (New) The communication apparatus as in claim 30 wherein the first, second and third communication connections define a 1:1:1 connection relationship.

32. (New) The communication apparatus as in claim 30 wherein the long latency link is a satellite link.
